

WU : ① Find the equation of joint variation if x varies directly with y and z and $x = 20$ when $y = 4$ and $z = 2.5$.
② Then find x when $y = 15$ and $z = 10$.

$$\begin{aligned} &\downarrow \\ X &= k \cdot y \cdot z \\ 20 &= k(4)(2.5) \end{aligned}$$

$$2 = \frac{20}{10} = \frac{\cancel{10} k}{\cancel{10}}$$

$$\boxed{X = 2 \cdot y \cdot z}$$

$$x = 2(15)(10)$$

$$x = 30(10) = \boxed{300}$$

Inverse Graph

$$y = \frac{1}{x}$$

$$y = \frac{1}{x}$$

x	y
.1	10
.01	100
.001	1000

x	y
-.1	-10
-.01	-100

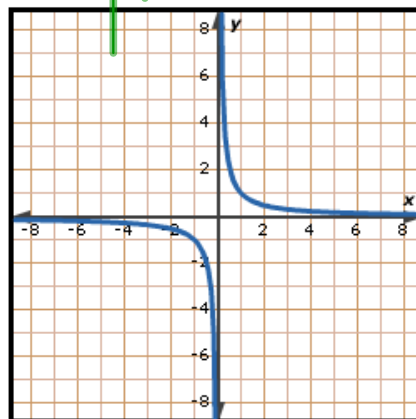
$$y = \frac{a}{x-h} + k = \frac{1}{x}$$

a  1.0


h  0.0

k  0.0

☐ Show center and asymptotes



McDougal Littell

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$$y = \frac{1}{x-3} + 2$$

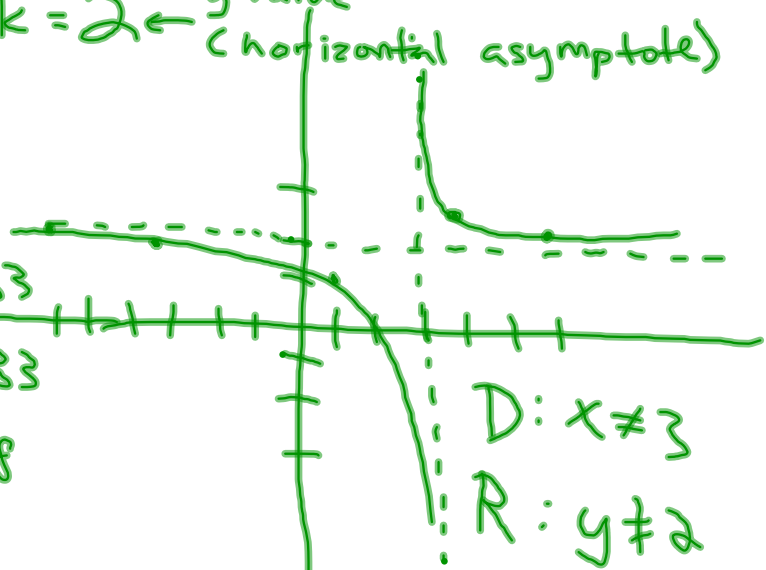
Graph

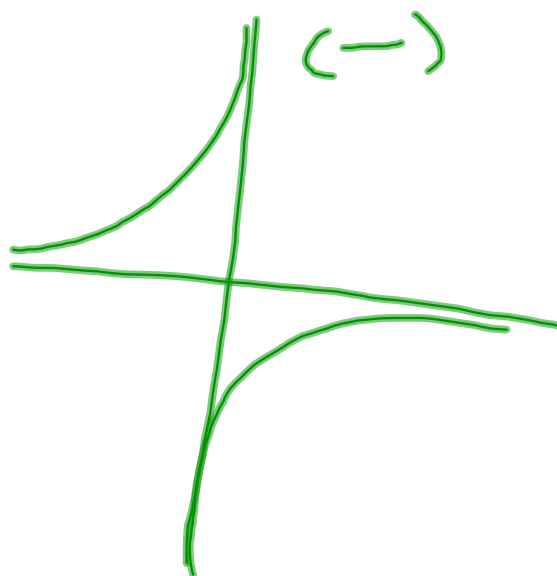
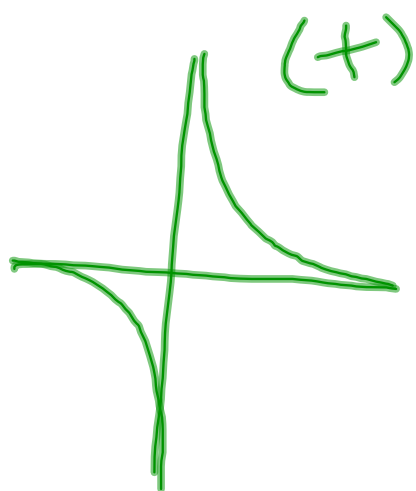
$$y = \frac{a}{x-h} + k$$

$h=3 \leftarrow$ x value
(vertical asymptote)

$k=2 \leftarrow$ y value
(horizontal asymptote)

x	y
4	$\frac{1}{4-3} + 2 = 3$
6	$\frac{1}{6-3} + 2 = 2.33$
-3	$\frac{1}{-3-3} + 2 = 1.833$
-6	$\frac{1}{-6-3} + 2 = 1.88$
1	$\frac{1}{1-3} + 2 = 1.5$



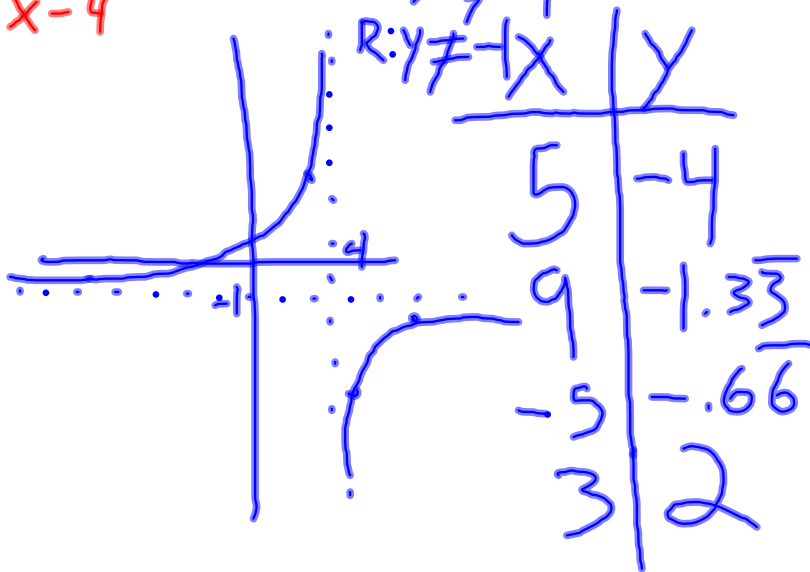


$$y = \frac{-3}{x-4} - 1$$

$$D: x \neq 4$$

$$R: y \neq -1$$

P 561
4, 5
18, 19



$$\textcircled{1} \quad y = \frac{a}{x}$$

$$\textcircled{2} \quad y = \frac{a}{x-h} + k$$

$$\textcircled{3} \quad y = \frac{ax+b}{cx+d}$$

Ex $y = \frac{2x+1}{x-3}$ $y = \frac{ax+b}{cx+d}$

(1) solve the denominator = 0

$$x-3=0$$

$$+3 \quad +3$$

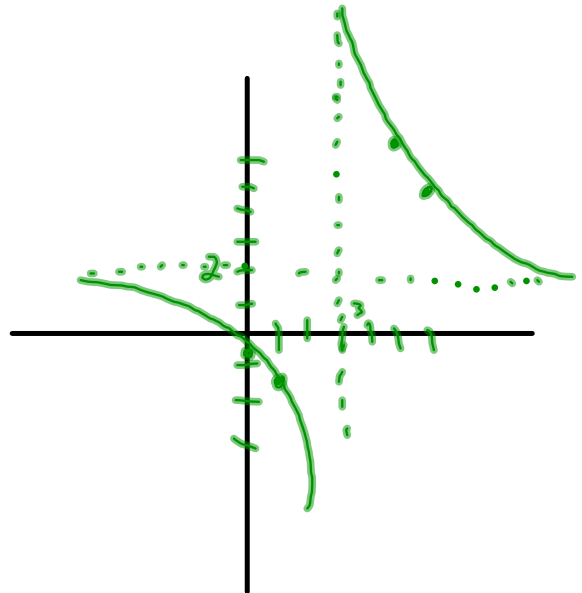
$x=3 \leftarrow$ vertical asymptote

(2) Horizontal asymptote

$$y = \frac{a}{c} = \frac{2}{1} = 2 \leftarrow \text{horizontal}$$

$$y = \frac{2x+1}{x-3} =$$

x	y
5	5.5
6	4.33
1	-1.5
0	$-\frac{1}{3} = -.33$



$D: x \neq 3$
 $R: y \neq 2$

